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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,407	12/11/2003	Abdelaziz Ikhlef	GEMS8081.201	1406

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EXAMINER
KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/707,407	IKHLEF ET AL.	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/24/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 4-10, 12-14, and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mattson et al. (US Patent 6553092) in view of Fujii et al. (US Patent 4982096).

2. Regarding claims 1, 8, 20, and 25, Mattson et al. discloses an apparatus and method comprising a scintillator array in a cellular arrangement having a plurality of scintillators positioned adjacently to one another (fig. 6b, #24), a photodiode array in a cellular arrangement having a plurality of photodiodes (fig. 6b, #22) and operationally aligned to detect illumination of a respective scintillator in the scintillator array (fig. 6b, #24), and an optical mask having at least one mask element (fig. 6b, #46) configured to reduce optical transference between a scintillator (fig. 6b, #46) and a neighboring photodiode (fig. 6b, #22).

However, Mattson et al. does not disclose an optical mask element between a scintillator array and a photodiode array.

Fujii et al. teaches an optical mask (fig. 9, #150, or fig. 5, #104a) between a scintillator array (fig. 9, #151, or fig. 5, #102) and a photodiode array (fig. 9, #155, or fig. 5, #106).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus and method of Mattson et al. with the mask of Fujii et al., since one would be motivated to make such a modification to improve detectors and reduce cross talk (col. 1, line 45) as implied from Fujii et al.

3. Regarding claim 4, Mattson et al. further discloses wherein the optical mask is defined by a plurality of parallel optical inhibitor elements (fig. 6b, #46) extending traversely along a width of the photodiode array (fig. 6b, #22).

4. Regarding claims 5, 6, and 22-24, Mattson et al. further discloses wherein the optical mask is formed of optical absorbing and reflecting opaque material (col. 4, lines 62-67).

5. Regarding claim 7, Mattson et al. further discloses wherein each scintillator (fig. 6b, #24)/photodiode (fig. 6b, #22) combination defines a detector cell and wherein the optical mask (fig. 6b, #46) is configured to reduce cross-talk between adjacent cells.

6. Regarding claims 9 and 10, Mattson et al. further discloses wherein the at least two scintillators (fig. 6, #24) are spaced from one another by a lateral gap (fig. 6, gap between #24), and wherein each mask element (fig. 6, #46) has a width equal to at least a width of the lateral gap.

7. Regarding claims 12 and 13, Mattson et al. as modified above suggests an apparatus as recited above.

However, Mattson et al. does not disclose wherein at least two scintillators are spaced from at least two photodiodes by a vertical gap, and wherein each mask element has a thickness at least equal to a height of the vertical gap.

Fujii et al. further discloses wherein at least two scintillators (fig. 9, #151) are spaced from at least two photodiodes (fig. 9, #155) by a vertical gap (fig. 9, gap defined by #152), and wherein each mask element (fig. 9, #150) has a thickness at least equal to a height of the vertical gap.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Mattson et al. with the mask of Fujii et al., since one would be motivated to make such a modification to improve detectors and reduce cross talk (col. 1, line 45) as implied from Fujii et al.

8. Regarding claims 14 and 24, Mattson et al. as modified above suggests an apparatus as recited above.

However, Mattson et al. does not disclose fabrication with black polyamide.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Mattson et al. as modified above with black polyamide, since it would be within the general skill of a worker in the art to select a known material on the basis of its suitability, such as Kevlar, which is a polyamide. One would be

motivated to make such a modification for stronger components, which are more damage resistance.

9. Regarding claim 21, Mattson et al. further discloses the mask in a cellular arrangement (fig. 6b, #46).

10. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mattson et al. and Fujii et al. as applied to claim 1 above, and further in view of Hoheisel et al. (US Patent 6847701).

Mattson et al. as modified above suggests an apparatus as recited above. Mattson et al. further discloses the scintillator array (fig. 5, #24) and the photodiode array (fig. 5, #22) dimensionally equivalent.

However, Mattson et al. does not disclose an optical mask including a grid of intersecting optical inhibitor elements dimensionally equivalent to an array.

Hoheisel et al. teaches an optical mask including a grid of intersecting optical inhibitor elements (fig. 3, #17) dimensionally equivalent to an array (fig. 3, #15).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Mattson et al. as modified above with the mask of Hoheisel et al., since one would be motivated to make such a modification for reducing scatter noise (col. 1, lines 43-50) as implied from Hoheisel et al.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mattson et al. and Fujii et al. as applied to claim 10 above, and further in view of Iwanczyk et al. (US Patent 6534773).

Mattson et al. as modified above suggests an apparatus as recited above.

However, Mattson et al. does not disclose wherein a width of each mask element exceeds that of a width of a lateral gap.

Iwanczyk et al. teaches wherein a width of each mask element (fig. 5, #26) exceeds that of a width of a lateral gap (fig. 5, gap defined by #22 and between #30).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Mattson et al. as modified above with the mask element of Iwanczyk et al., since one would be motivated to make such a modification for improved contrast (col. 3, lines 19-23) and easier aligning (col. 3, lines 38-50) as shown by Iwanczyk et al.

12. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mattson et al. in view of Fujii et al. and Iwanczyk et al.

13. Regarding claims 15 and 16, Mattson et al. as modified above suggests an apparatus as recited above. Mattson et al. further discloses a rotatable gantry (fig. 1, #10) having a bore centrally disposed therein (fig. 1, #14), a table movable fore and aft (fig. 1, #12) through the bore (fig. 1, #14) and configured to position a subject for CT data acquisition (fig. 1, #20 and 30), a high frequency electromagnetic energy projection source (fig. 1, #16) positioned within the

rotatable gantry (fig. 1, #10) and configured to project high frequency electromagnetic energy toward the subject (fig. 1, subject to be placed on #12) and a detector array (fig. 1, #20) disposed within the rotatable gantry (fig. 1, #10) and configured to detect high frequency electromagnetic energy projected by the projection source (fig. 1, #16) and impinged by the subject (fig. 1, subject to be placed on #12).

However, Mattson et al. does not disclose inhibitors interstitially layered that absorbs light.

Iwanczyk et al. teaches inhibitors interstitially layered that absorbs light (fig. 5, #26).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Mattson et al. as modified above with the mask of Iwanczyk et al., since one would be motivated to make such a modification for improved contrast (col. 3, lines 19-23) and easier aligning (col. 3, lines 38-50) as shown by Iwanczyk et al.

14. Regarding claims 17 and 19, Mattson et al. further discloses wherein the array of optical cross-talk inhibitors is configured to reflect light, which is fabricated from opaque materials (col. 4, lines 62-67).

15. Regarding claim 18, Mattson et al. as modified above suggests an apparatus as recited above.

However, Mattson et al. does not disclose fabrication with silicon.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the apparatus of Mattson et al. as modified above with silicon, since it would be within the general skill of a worker in the art to select a known material on the basis of its suitability. One would be motivated to make such a modification for more precise construction parameters using lithography.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gk

EDWARD J. GLICK
PATENT EXAMINER